



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,318	07/18/2003	Barry James Stagg	03234.0014U2	4336
23859	7590	03/23/2006	EXAMINER	
NEEDLE & ROSENBERG, P.C. SUITE 1000 999 PEACHTREE STREET ATLANTA, GA 30309-3915			NGUYEN, TU T	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,318

Applicant(s)

STAGG, BARRY JAMES

Examiner

Tu T. Nguyen

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-28 is/are allowed.
- 6) ☒ Claim(s) 1-2, 5-22 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/13/03, 3/22/04, 12/22/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____

DETAILED ACTION

Abstract

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

For this application, the abstract has more than 150 words.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2,5-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dec et al ("Soot distribution in a D.L Diesel Engine Using 2-D laser-Induced Incandescence Imaging" SAE Transactions, 100, pp.277-288, 1991) in view of Lawless

(5,109,708) and Snelling et al ("A Calibration-Independent Technique of Measuring Soot by Laser-induced Incandescence Using Absolute Light Intensity, 2001).

With respect to claim 1, Dec discloses a method for measuring a particles using Laser-induced incandescence (LII hereinafter). The method comprises: heating the soot (page 2, column 1, second paragraph), measuring the LII (camera, fig 3).

Dec does not explicitly disclose the claimed sampling particles and adjusting the sample to conditions suitable for LII. Lawless discloses a sampling system. The system comprises: sampling the sample and diluted (adjusting) the sample to an acceptable temperature to any conventional measuring instrument (abstract). It would have been obvious to modify Dec with the sampling system taught by Lawless to facilitate the measuring.

Dec does not disclose measuring the sample in-situ and correlating the LII with actual particle fineness. Snelling discloses measuring particles in-situ (Introduction section, 3rd paragraph) and correlating the LII with a known soot volume (or actual particle fineness) (Introduction section, 6th paragraph). It would have been obvious to modify Dec with the in-situ and correlating method taught by Snelling to measure the sample in real time. Further, snelling also suggests correlating the obtained values of particle size with other quality parameters (column 3, lines 64-68).

With respect to claim 2, Lawless discloses drawing a side stream from a source (vertical tube of fig 2).

With respect to claims 5,21, Lawless discloses diluting the sample (abstract).

With respect to claims 6-7, Lawless does not explicitly disclose the level of diluting the sample. However, it would have been obvious to modify Lawles with different levels of diluting as claimed for measuring different types of sample.

With respect to claim 8, Lawless discloses bringing the sample to a temperature acceptable to any conventional measuring systems (abstract). It would have been obvious to modify Lawless to bring the temperature of the sample to ambient conditions as claimed to facilitate the measuring.

With respect to claim 9, Dec discloses comparing the measured LII with a predetermined sample (page 6, 2nd paragraph). It would have been obvious to modify Dec by comparing the data at a same time the sample being drawn to make the system more accurate.

With respect to claims 10-11, Lawless disclose using the system for on-line quality control (column 3, lines 65-68). It would have been obvious to modify Dec in view of Lawless for measuring the sample in real time for instantly reporting the measured results.

Art Unit: 2877

With respect to claim 12, the claimed carbon black would have been known in the art. it would have been obvious to modify Dec to measure different types of particle for different intended uses.

With respect to claims 13,18,20, it would have been obvious to modify Dec by attaching the system to different sections (carbon black reactor or reactor breeching section) as claimed to measure different kinds of sample.

With respect to claims 14-16, Dec in view of Lawless disclose the LII system. However, Dec does not disclose the claimed measurements. It would have been obvious to modify Dec to measure the decay rate of the temperature or the decay rate of the signal or normalized specific surface area for different needs.

With respect to claim 17, refer to discussion in claim 1 above for the system and claim 12 for the carbon black.

With respect to claim 19, refer to discussion in claim 1 above for the system and the in-situ.

With respect to claim 22, refer to discussion in claim 19 above for the system and claim 12 for the carbon particles.

Allowable Subject Matter

Claims 23-28 are allowed.

As per independent claim 23, the prior arts of record, taken alone or in combination, fail to disclose or render obvious the steps of c) measuring particle fineness of the adjusted particulate sample using LII, d) sending a signal related to LII-measured particle fineness to a controller, e) comparing the particle fineness signal to a set point, and f) sending a signal from the controller to adjust operation of the flame generated particulate production process, in combination with the rest of the limitations of the claim.

As per independent claim 28, the prior arts of record, taken alone or in combination, fail to disclose or render obvious the steps of c) measuring incandescence signals and scattering data for the adjusted sample using LII, and d) correlating the LII incandescence signals and scattering data measurements with actual particle fineness and aggregate size, in combination with the rest of the limitations of the claim.

Claims 3-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Prior arts of record do not disclose the sidestream as claimed in claim 3 in combination with the limitations of the base claim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T. Nguyen whose telephone number is (571) 272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley Jr. can be reached on (571) 272-2800 Ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu T. Nguyen
Primary Examiner
Art Unit 2877

03/18/2006